

Amendment A
USSN 10/648,891
May 26, 2005
Reply to Office Action of February 28, 2005
Page 3

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended) A charging circuit for controlling a system charging parameter provided to a host of batteries by a DC to DC converter, wherein said host of batteries comprises at least a first battery and second battery that may be coupled in parallel, said charging circuit comprising:

a first path configured to monitor a first battery charging current level provided to said first battery;

a second path configured to monitor a second battery charging current level provided to said second battery; and

a third path configured to monitor a first battery charging voltage provided to said first battery;

a fourth path configured to monitor a second battery charging voltage provided to said second battery; and

a regulating circuit configured to reduce said system charging parameter provided to said host of batteries by providing a control signal to said DC to DC converter if said first battery charging current exceeds a first predetermined maximum charging current level or said second battery charging current exceeds a second predetermined maximum charging current level, or

Amendment A
USSN 10/648,891
May 26, 2005
Reply to Office Action of February 28, 2005
Page 4

said first battery charging voltage exceeds a first maximum charging voltage level, or said second battery charging voltage exceeds a second maximum charging voltage level, said first and second maximum charging current levels and said first and second maximum charging voltage levels provided to at least one input terminal of said charging circuit by a host power management unit.

Claim 2 (currently amended): The charging circuit of claim 1, wherein said first predetermined maximum charging current level is substantially equal to said second predetermined maximum charging current level.

Claim 3 (cancelled)

Claim 4 (currently amended): The charging circuit of claim [[3]] 1, wherein said first predetermined maximum charging voltage level is substantially equal to said second predetermined maximum charging voltage level.

Claim 5 (currently amended) The charging circuit of claim 1, wherein said first path comprises a first error amplifier configured to receive a first monitoring signal representative of said first battery charging current level and a first comparison signal representative of said first predetermined maximum charging current level, and to provide a first control signal to said regulating circuit based on a difference between said first monitoring signal and said first comparison signal, and wherein said second path comprises a second error amplifier configured

Amendment A
USSN 10/648,891
May 26, 2005
Reply to Office Action of February 28, 2005
Page 5

to receive a second monitoring signal representative of said second battery charging current level and a second comparison signal representative of said second ~~predetermined~~ maximum charging current level, and to provide a second control signal to said regulating circuit based on a difference between said second monitoring signal and said second comparison signal, an output of said first and second error amplifiers coupled directly to said regulating circuit, and wherein said first error amplifier controls said regulated circuit if said first error amplifier detects said first charging current is greater than said first maximum charging current level before said second error amplifier detects said second charging current is greater than said second maximum charging current level.

Claim 6 (currently amended) A method for controlling a system charging parameter provided to a host of batteries by a DC to DC converter, wherein said host of batteries comprises at least a first battery and second battery that may be coupled in parallel, said method comprising:

monitoring a first battery charging current level provided to said first battery with a charging circuit;

monitoring a second battery charging current level provided to said second battery with a charging circuit; and

monitoring a first battery charging voltage provided to said first battery with a charging circuit;

monitoring a second battery charging voltage provided to said second battery with a charging circuit; and

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Amendment A
USSN 10/648,891
May 26, 2005
Reply to Office Action of February 28, 2005
Page 6

reducing said system charging parameter provided to said host of batteries if said first charging current level exceeds a first predetermined maximum charging current level or said second charging current level exceeds a second predetermined maximum charging current level, or said first battery charging voltage exceeds a first maximum charging voltage level, or said second battery charging voltage exceeds a second maximum charging voltage level, said first and second maximum charging current levels and said first and second maximum charging voltage levels provided to at least one input terminal of said charging circuit by a host power management unit.

Claim 7 (currently amended) The method of claim 6, wherein said first predetermined maximum charging current level is substantially equal to said second predetermined maximum charging current level.

Claim 8 (cancelled)

Claim 9 (currently amended) The method of claim [[8]] 6, wherein said first predetermined maximum charging voltage level is substantially equal to said second predetermined maximum charging voltage level.

Claim 10 (currently amended) A charging circuit for regulating an output parameter of a DC to DC converter, said output parameter of said DC to DC converter providing power to a

Amendment A
USSN 10/648,891
May 26, 2005
Reply to Office Action of February 28, 2005
Page 7

host of batteries, wherein said host of batteries comprises at least a first battery and second battery that may be coupled in parallel, said charging circuit comprising:

 a first path configured to monitor a first battery charging current level provided to said first battery;

 a second path configured to monitor a second battery charging current level provided to said second battery;

 a third path configured to monitor a first battery charging voltage level provided to said first battery;

 a fourth path configured to monitor a second battery charging voltage level provided to said second battery; and

 a regulating circuit configured to reduce said output parameter of said DC to DC converter if one of said first battery charging current level, said second battery charging current level, said first battery charging voltage level, and said second battery charging voltage level exceeds an associated predetermined maximum level when said first battery and said second battery are coupled in parallel, said associated maximum levels provided to at least one input terminal of said charging circuit by a host power management unit.

Claim 11 (currently amended) An electronic device comprising:

 a power management unit configured to provide an output signal representative of at least a first predetermined maximum charging current level, and a second predetermined maximum charging current level, a first maximum charging voltage level, and a second maximum charging voltage level;

Amendment A
USSN 10/648,891
May 26, 2005
Reply to Office Action of February 28, 2005
Page 8

a host of batteries comprising at least a first battery and a second battery coupled in parallel;

a charging circuit for controlling a system charging parameter provided to said host of batteries by a DC to DC converter, said charging circuit comprising:

a first path configured to monitor a first battery charging current level provided to said first battery and compare said first battery charging current level to said first predetermined maximum charging current level;

a second path configured to monitor a second battery charging current level provided to said second battery and compare said second battery charging current level to said second predetermined maximum charging current level; and

a third path configured to monitor a first battery charging voltage provided to said first battery and compare said first battery charging voltage to said first maximum charging voltage level;

a fourth path configured to monitor a second battery charging voltage provided to said second battery and compare said second battery charging voltage to said second maximum charging voltage level; and

a regulating circuit configured to reduce said system charging parameter provided to said host of batteries if said first charging current exceeds said first predetermined maximum charging current level or said second charging current exceeds said second predetermined maximum charging current level, or said first battery charging voltage exceeds said first maximum charging voltage level, or said second battery charging voltage exceeds said second maximum charging voltage level, said first and second maximum charging current levels and

Amendment A
USSN 10/648,891
May 26, 2005
Reply to Office Action of February 28, 2005
Page 9

said first and second maximum charging voltage levels provided to at least one input terminal of
said charging circuit by said power management unit.

Claim 12 (original) The electronic device of claim 11, wherein said output signal from said power management unit comprises an analog signal.

Claim 13 (original) The electronic device of claim 11, wherein said output signal from said power management unit comprises a digital signal.

Claim 14 (original) The electronic device of claim 13, wherein said charging circuit further comprises:

a digital interface configured to receive said digital signal from said power management unit and provide an interface output signal; and

a DAC configured to receive said interface output signal and convert said signal to an analog signal representative of said interface output signal.

Claim 15 (currently amended) The electronic device of claim 14, wherein said charging circuit further comprises a multiplexer to separate said analog signal into a plurality of analog signals representative of at least said first predetermined maximum charging current level, and said second predetermined maximum charging current level, said first maximum charging voltage level, and said second maximum charging voltage level.

Amendment A
USSN 10/648,891
May 26, 2005
Reply to Office Action of February 28, 2005
Page 10

Claim 16 (currently amended) An electronic device that may be powered by one or more of a host of rechargeable batteries or a DC power source, said electronic device comprising:

a power management unit (PMU) configured to run a power management routine;
a charging circuit configured to control charging of said host of rechargeable batteries, wherein said host of batteries comprises at least a first battery and a second battery coupled in parallel, said charging circuit comprising: a first path configured to monitor a first battery charging current level provided to said first battery and compare said first battery charging current level to said first predetermined maximum charging current level; a second path configured to monitor a second battery charging current level provided to said second battery and compare said second battery charging current level to said second predetermined maximum charging current level; a third path configured to monitor a first battery charging voltage provided to said first battery and compare said first battery charging voltage to said first maximum charging voltage level; a fourth path configured to monitor a second battery charging voltage provided to said second battery and compare said second battery charging voltage to said second maximum charging voltage level; and

a regulating circuit configured to reduce said system charging parameter provided to said host of batteries if said first charging current exceeds said first predetermined maximum charging current level or said second charging current exceeds said second predetermined maximum charging current level, or said first battery charging voltage exceeds said first maximum charging voltage level, or said second battery charging voltage exceeds said second maximum charging voltage level, said first and second maximum charging current levels and

Amendment A
USSN 10/648,891
May 26, 2005
Reply to Office Action of February 28, 2005
Page 11

said first and second maximum charging voltage levels provided to at least one input terminal of
said charging circuit by said power management unit; and

a selector circuit configured to select at least one of said DC source and said host of
batteries in response to a PMU output signal from said PMU.

Claim 17 (original): The electronic device of claim 16, wherein said charging circuit
and said selector circuit are integrated onto one integrated circuit.